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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/741,999	12/22/2000	Richard P. Modelski	P 269864 NOR- 13164BA	7780

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EXAMINER	
MAHMOUDI, HASSAN	

ART UNIT	PAPER NUMBER
2175	

DATE MAILED: 12/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/741,999	MODELSKI ET AL.	
	Examiner	Art Unit	
	Tony Mahmoudi	2175	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-18 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-18 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

SAM RIMELL
PRIMARY EXAMINER

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Specification

1. The arrangement of the disclosed application does not conform with 37 CFR 1.77(b).

Section heading appear **boldfaced** throughout the disclosed specification. Section headings should not be **boldfaced**. Appropriate corrections are required according to the guidelines provided below:

2. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, *without underlining or bold type*, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.
(b) CROSS-REFERENCE TO RELATED APPLICATIONS.
(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
(d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
(e) BACKGROUND OF THE INVENTION.
(1) Field of the Invention.
(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
(f) BRIEF SUMMARY OF THE INVENTION.
(g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
(h) DETAILED DESCRIPTION OF THE INVENTION.

(i) CLAIM OR CLAIMS (commencing on a separate sheet).
(j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
(k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Objections

3. Claims 5-18 are objected to because of the following informalities:

In claim 5, line 2: the preamble of the claim ends with a semicolon ";". The preamble of claims should end with a colon ":". Correction is required.

In claim 9, line 2: "and" should be removed from the end of line 2 and inserted to the end of line 3. Correction is required.

Claims 6-18 are objected to because they are dependents from the objected to independent claim 5.

Double Patenting

4. Claim 17 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 16. Applicant is advised that should claim 16 be found allowable, claim 17 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in
> (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or
> (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-3, 5-6, and 9-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Narad et al (U.S. Patent No. 6,157,955.)

As to claim 1, Narad et al teaches a method for direct access to bit fields in instruction operands (see Abstract, and see column 11, lines 12-24), the method comprising:

providing a bit field consisting of a plurality of bits in a plurality of bit positions (see column 22, lines 9-45);

performing instruction operations utilizing bit fields in source and target operands (see column 27, lines 4-7, and see column 28, lines 17-24); and

providing direct manipulation of any bits in any bit field (see column 24, lines 50-64, and see column 59, lines 39-50.)

As to claim 2, Narad et al teaches the method further comprising:

transferring data from an input buffer to a packet task manager (see column 9, lines 11-26, and see column 15, lines 14-18);

dispatching the data from the packet task manager to an analysis machine (see column 13, lines 14-43, and see column 36, lines 40-45);

classifying the data in the analysis machine (see column 37, lines 15-26); and

modifying (see column 31, lines 29-32) and forwarding the data in a packet manipulator (see column 31, lines 35-53);

wherein no instruction depends on a preceding instruction because each instruction in a pipeline is executed for a different thread (see column 37, line 63 through column 38, line 3, and see column 41, lines 50-55.)

As to claim 3, Narad et al teaches the method further comprising:

transferring the data after modifying and forwarding to an output buffer (see column 9, lines 1-27.)

As to claim 5, Narad et al teaches an apparatus for directly accessing bit fields in instruction operands (see Abstract, and see column 11, lines 12-24), the apparatus comprising:

at least one memory (see figure 4, see column 7, lines 14-15, and see column 8, lines 12-15);

at least one processor (see column 8, lines 38-39);

a bus interconnecting the at least one memory and the at least one processor (see figure 3, and see column 7, lines 26-31);

wherein one of the at least one processor retrieves a bit field consisting of a plurality of bits in a plurality of bit positions (see column 22, lines 9-45, and see column 43, lines 56-60), performs instruction operations utilizing bit fields in source and target operands (see column 27, lines 4-7, and see column 28, lines 17-24), and provides direct manipulation of any bits in any bit field (see column 24, lines 50-64, and see column 59, lines 39-50.)

As to claim 6, Narad et al teaches wherein the processor comprises:

an analysis machine having multiple pipelines (see column 3, lines 56-65);

a packet task manager operationally connected to the analysis machine (see column 14, lines 53-63); and,

a packet manipulator operationally connected to the analysis machine (see column 59, line 39 through column 60, line 10.)

As to claim 9, Narad et al teaches the apparatus further comprising:

a packet task manager operationally connected to the analysis machine (see column 14, lines 53-63);

a packet manipulator operationally connected to the analysis machine (see column 59, line 39 through column 60, line 10); and

a global access bus including a master request bus and a slave request bus separated from each other and pipelined (see figure 3, and see column 7, lines 26-31.)

As to claim 10, Narad et al teaches the apparatus further comprising:

an external memory engine operationally connected to the analysis machine (see column 7, lines 63-67); and

a hash engine operationally connected to the analysis machine (see column 4, lines 52-53, and see column 6, line 62 through column 7, line 2.)

As to claims 11 and 12, Narad et al teaches the apparatus further comprising:

packet input global access bus software code used for flow of data packet information from a flexible input data buffer to an analysis machine (see figure 2, see column 32, lines 1-7, and see column 33, lines 64-67.)

As to claim 13, Narad et al teaches the apparatus further comprising:

statistics data global access bus software code used for connection of an analysis machine to a packet manipulator (see column 8, lines 15-20, and see column 15, lines 21-22.)

As to claim 14, Narad et al teaches the apparatus further comprising:

private data global access bus software code used for connection of an analysis machine to an internal memory engine submodule (see column 12, line 50 through column 13, line 13.)

As to claim 15, Narad et al teaches the apparatus further comprising:

lookup global access bus software code used for connection of an analysis machine to an internal memory engine submodule (see column 36, lines 40-45.)

As to claims 16 and 17, Narad et al teaches the apparatus further comprising:

results global access bus software code used for providing flexible access to an external memory (see column 36, lines 46-58.)

As to claim 18, Narad et al teaches the apparatus further comprising:

a bi-directional access port operationally connected to the analysis machine (see column 104, lines 50-62);

a flexible data input buffer operationally connected to the analysis machine (see column 15, lines 14-18); and

a flexible data output buffer operationally connected to the analysis machine (see column 16, lines 26-30.)

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Narad et al (U.S. Patent No. 6,157,955) in view of Islam et al (U.S. Publication No. 2003/0035430 A1.)

As to claim 4, Narad et al teaches the method further comprising:

processing data (see Abstract.)

Narad et al does not teach processing data at a rate of at least 10 Gbs.

Islam et al teaches a programmable network device (see Abstract), in which he teaches processing data at a rate of at least 10 Gbs (see paragraph 43.)

Therefore, it would have been obvious to a person having ordinary skill in the art to have modified Narad et al to include processing data at a rate of at least 10 Gbs.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Narad et al by the teaching of Islam et al, because processing data at a rate of at least 10 Gbs, would enhance the processing speed of the data and reduce the processing time and the load on the data networks.

9. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Narad et al (U.S. Patent No. 6,157,955) in view of Stuttard et al (U.S. Publication No. 2002/0174318 A1.)

As to claim 7, Narad et al does not teach wherein the analysis machine is multi-threaded.

Stuttard et al teaches a parallel data processing apparatus (see Abstract), in which he teaches wherein the analysis machine is multi-threaded (see paragraphs 49-50.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Narad et al to include wherein the analysis machine is multi-threaded.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Narad et al by the teaching of Stuttard et al, because wherein the analysis machine is multi-threaded, would enable concurrent processing of multiple tasks simultaneously.

As to claim 8, Narad et al as modified teaches, wherein the analysis machine has 32 threads (see Stuttard et al, paragraph 153.)

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of art with respect to methods and systems bit field manipulation in data processing systems in general:

Patent/Pub. No.	Issued to	Cited for teaching
US 20030088610A1	Kohn et al.	Multi-threaded processor with 32 threads.

11. Any inquiries concerning this communication or earlier communications from the examiner should be directed to Tony Mahmoudi whose telephone number is (703) 305-4887. The examiner can normally be reached on Mondays-Fridays from 08:00 am to 04:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dov Popovici, can be reached at (703) 305-3830.

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December 22, 2003

SAM RIMELL
PRIMARY EXAMINER